

## ABSTRACT

Microorganism sensors used in environment assessment technologies and the like,  
instead of being used to detect environmental components and determine their concentrations,  
5 were used as tools to evaluate the ability of target soil microorganisms to adapt to various field  
soil environments, and comparative studies were performed. As a result, the present inventors  
found that by using the microorganism sensors to examine the growth potential of general soil  
microorganisms and pathogenic microorganisms in ecosystems, the balance in the soil  
ecosystems could be monitored, and further, the risk of disease occurrence and the  
10 bio-controlling effect of general soil microorganisms could also be determined.